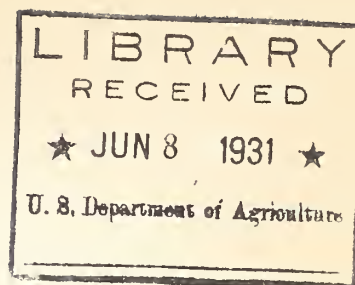


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BLISTER RUST AND WHITE PINE

DEMONSTRATION AREAS

MASSACHUSETTS



BLISTER RUST AND WHITE PINE  
DEMONSTRATION AREAS

<u>Contents</u>	<u>Page</u>
1. Effect of Blister Rust on White Pine.....	3
*2. Areas Demonstrating Special Facts Regarding Blister Rust.....	
3. Effectiveness of Eradication of Ribes in Controlling Blister Rust..	6
4. Efficiency of Ribes Eradication.....	7
5. Effect of Different Species of Infected Ribes on White Pine.....	8
6. Effect of Blister Rust in White Pine Plantations.....	10
7. Effect of Blister Rust on Ornamental Pine, and Cutting Out Cankers.....	13, 24
8. Location of Wild Ribes Species.....	13
9. White Pine as a Crop.....	14
10. Old Growth White Pines.....	15
11. White Pine Plantations of Different Ages and Special Significance as Regards Site, Growth, etc.....	16
12. White Pine Management (Thinning, Pruning, release cuttings, pine in mixture, etc.).....	18
13. Utilization of White Pine.....	19
14. Special Enemies of White Pine.....	20
15. Diseases on Conifers Other Than White Pine.....	21
16. Special Forestry Features.....	22
17. Berkshire Forestry Tour.....	25
* Areas to be added later as located.	

REFERENCES

\*\*\*\*\*

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BLISTER RUST AND WHITE PINE  
DEMONSTRATION AREAS  
(Data as of January, 1928)

MASSACHUSETTS

1. Effect of Blister Rust on White Pine

Berkshire County

Becket. W.G. Palmer lot on Jacob's Ladder Highway. Pasture pines about 30 years old but fairly close stand. Inclined to be limby, however. Considerable infection on branches. Few stem cankers and only two to three dead and dying trees. Infection all old, dating back to 1910 or earlier. Few wild gooseberries, small and spindly along edge of narrow swampy place adjoining stand. Apparently disease entered here just at a time when pines were closing in on the Ribes and have kept the disease down by suppressing the Ribes. No recent infections are apparent here. Across swampy area are a few small pines about 12 years old. Many of these are now dead. These were less sheltered and got badly sprinkled with the rust. (G.S.D.)

Great Barrington. Darlington Lot; Mason Lot; Mackie Lot, in the Berkshire Heights section. Lots of four to eight acres heavy reproduction badly infected. Many dead and dying pines. Quantities of youngest pines dead and now disappeared. Found in 1923. Oldest infection 1919; heaviest year of infection 1922. Wild gooseberry bushes abundant in adjoining pasture; red and wild black currants plentiful along roadside- eradicated in 1924. No new infections since that year. Two small plots show 48% and 55% of the trees diseased and 8% and 24% dead in 1927. (G.S.D.).

Great Barrington. Fred Remington lot on Nigger Hill. Pine from 20 to 30 years old. Many dead and dying trees up to 8" diameter. Larger pines much infected in the branches. Oldest infection 1908; youngest 1925; heaviest infection 1920. Ribes mostly wild gooseberries, large and bushy; few scattered red and black currants eradicated in 1926. (G.S.D.)

Lee. Name of lot unknown. Located on the Lee-Tyringham State road. Pines about 12 or 14 years old. Old pasture partly filled with pines 40 to 50 years old which spread seed. Wild gooseberries abundant; were heavily infected in 1920 but no disease could be found on the pines at that time. Examined again in 1925 when most of the small pines were found infected and a large per cent of them were dead. The greater part of this reproduction is now gone. Visitors would need a guide to show where the pines once grow. (G.S.D.)

New Marlboro. Mrs. W.E. Bryan lot, Mill River, Two lots, one near house on Mill River Road, the other about 1/4 mile off the highway. Both have small pines six to ten years old, badly infected. Many pines dead and dying. Wild gooseberries the cause. (G.S.D.).



# 1. Effect of Blister Rust on White Pine

## Berkshire County

New Marlboro. T.F. Murray lot near Mill River. About ten acres, average age about 25 years. Pasture growth but most of it well closed and not branchy. Wild gooseberries abundant throughout most of the area. Eradicated in 1926. Quantities of younger pines of pole stage, dead and dying. Most of still younger growth being killed out. Much of it already gone. (G.S.D.)

New Marlboro. Will Rugg lot in Southfield, Mass. Two or three acres of pine from 20 to 40 years. Tops badly infected, many broken off. Some wild gooseberries along fences but there is not much evidence of disease from these. Stand is near foot of slope and spores apparently spread from Ribes in garden along village street above stand. Eradicated 1927. (G.S.D.)

Sheffield. Merrill Winn lot. About one acre around ten years old; came up in old field adjoining stonewall and old pine. Gooseberries abundant along wall. Majority of pines dead in 1926 when found. Eradicated that year. Group of pines 100 to 200 feet away from the Ribes concentration are still alive, and thriving. (G.S.D.)

## Franklin County

Conway. Fred Hamilton lot - 5 acres of young or middle aged pine, very dense. Seriously infected and very conspicuous because of basal cankers. Area located in 1925; all Ribes (wild) destroyed in 1927. Detailed study made in 1927 on  $\frac{1}{2}$  acre. (G.S.D.)

Rowe. Tetroault lot. 6 acres of pine; one acre of which is heavily infected. Large cankers well up in the trees and very conspicuous. Area found in 1926; oldest canker 1905. Infection caused by Ribes nigrum, 12 bushes located 300 feet from the pine; destroyed in 1917. Few wild Ribes destroyed in 1926. No new infections since 1918. Detailed study of the area made in 1927. (G.S.D.)

Shelburne. Reynolds lot. 10 acres of medium to mature pasture pine. Pines seriously infected; oldest canker 1908-1909. Source probably, Ribes nigrum but none found; may have been removed earlier. Part of the area logged in the winter of 1926-1927. (G.S.D.)

South Ashfield. (Reproduction). George Morton and Doctor Murray lots; two acres each. Plot found in 1925; oldest canker 1916. Infection caused by Ribes cynosbati. Ribes destroyed in 1927. Evidence of dying trees is becoming more and more conspicuous. Study of damage made in 1925. (G.S.D.)

## Hampden County

Chester. Joy lot. 2 acres of pine reproduction heavily infected; studies in 1923 indicated 60% infection; oldest canker 1912; dead and dying trees now conspicuous; cankers mostly of 1919-1921 origin. Infection caused by Ribes cynosbati. All Ribes destroyed 1925; no new infections. (R.E.W.)



# 1. Effect of Blister Rust on White Pine

## Hampshire County

Huntington. Stanton lot. Many limb and trunk infections; 40% infected in 1923; oldest canker 1917; principal cankers of 1920-1921 origin. Source of infection Ribes cynosbati; all Ribes destroyed in 1925; no infection since eradication of Ribes. (R.E.W.)

## Plymouth County

Duxbury. Bow Street lot. Serious injury to group of ornamental pines. Middle aged pine. From Ribes nigrum; removed in 1917. (E.M.B.)

Easton. Middle aged pine. Ames estate on the turnpike. Serious damage to ornamental pines. Caused by Ribes nigrum. Ribes removed in 1917. (E.M.B.)

Wingham. Middle aged pine. Dorby Street lot. First discovered in 1926. Study plots in 1927 show 81% infection. Disease from Ribes nigrum. Ribes removed in 1926. (E.M.B.)

Marwell, reproduction - Two study plots; one on School Street, and one on Mt. Blue Street. Infection from Ribes hirtellum. Ribes destroyed in 1925. (E.M.B.)

Pembroke. Pembroke Arms Area. Serious blister rust damage to ornamental and woodlot pines, caused by infection spreading from a patch of Ribes nigrum which was destroyed in 1917. The entire area was also examined for wild Ribes that year. Only a few bushes were found and these were at considerable distance from the center of infection. Many medium and large size pines have been killed. Numerous infected branches and trees have been cut. In front of the house, several ornamental pines have been saved by the successful cutting out of branch and stem cankers. The Ribes eradication work has been very effective in preventing new infections. Pine reproduction is abundant and free of the disease. Area demonstrates damage to pine, distance of spread, effectiveness of control, use of pine for ornamental purposes and the successful treatment of infected ornamental trees.

Several study plots made - (E.M.B.)

## Worcester County

Ashburnham, Bulkley lot - five acres - trees from less than one to twenty feet in height. Heavy infection on pine - oldest canker 1916.- caused by small patch of skunk currants. Study made of distance of spread 1927. Ribes not eradicated. (W.C.)

Ashburnham. Hardy lot. 10 acres plantation and three acres young native pine. Part of plantation infected - native pine heavily infected. Found 1923 - oldest canker 1912. Plantation set out with stock from foreign nursery 1911. This is probably the source of infection. Infection on native pine from skunk currants. About two acres thickly matted with these Ribes - heavily infected when found - eradicated 1924. Study of pine infection made on two quarter-acre plots laid out in native pine area 1924-25. (W.C.)

1. Effects of Blister Rust on White Pine

Worcester County

Westminster. Viewig lot - 10 acres - pine reproduction and young mature. Infected from Ribes cynosbati. Found 1927, oldest canker 1914. Trunk cankers conspicuous. Ribes eradicated 1927. No detailed study of conditions has yet been made. (W.C.)

3. Effectiveness of Eradication of Ribes in Controlling Blister Rust.

Berkshire County

Egremont. Wait Talcott lot at North Egremont. Five to six acres medium size pine. Gooseberries plentiful throughout the area; eradicated in 1923. No study made because trees have been removed by owner as fast as found infected but the disease had been well established there before eradication and repeated searches have not brought any new cankers to light - that is, cankers started since 1923. It is not difficult to still find infected trees on this area. (G.S.D.)

Egremont. V.D. Ticknor lot at North Egremont; junction of Green River and Alford roads. Plantation 14 years old, about six acres. Wild gooseberries abundant and some red currants, all large bushes mostly along fences surrounding the lot. Eradicated in 1923. Three small plots studied on one side along wall. Total for these is 99 feet along wall and 33 feet wide. 91% of trees are diseased and 15% dead in 1925. Estimated 40% more will die. Two plots on opposite side along wall and roadway show about 50% infected and 20% dead or dying in 1927. Age of infection from 1916 to 1923 with heavy concentration in 1918 to 1922 inclusive. Some cankers 1923 but none since that year. One gooseberry was found adjacent to one of these plots and some recent infection may show there now or later. (G.S.D.)

Great Barrington. Fred Darlington lot in Berkshire Heights section. About six acres young pines about 12 years old. Gooseberries scattered on area, abundant in adjoining pasture. Red and black currants rather plentiful along roadways on two sides. Eradicated in 1924. On a small plot studied in 1927, 55% of the trees were diseased. Seemed likely that many of the smaller ones had been killed out and disappeared previous to study. Disease entered in 1919; became heavy in 1921; and thereafter up to 1923. Some cankers 1924 but none since that year. Study made middle of December 1927. (G.S.D.)

Essex County

Ipswich - Crane Estate. Special study plot in pine plantation. Eradication of Ribes completely successful in preventing further infection. No new infections found since the removal of Ribes in 1923. For further details refer to #6 "Effects of Blister Rust" etc" (W.T.R.)

3. Effectiveness of Eradication of Ribes in Controlling Blister Rust.

Hampden County

Blandford. Springfield Water Works Lands in North Blandford; area of 25 acres; original eradication in 1923; re-eradication showed 90% of the original bushes eradicated. Ribes glandulosum and cynosbati. (R.E.W.)

Chester. Joy lot. 2 acres of pine reproduction heavily infected; studies in 1923 indicated 60% infection; oldest canker 1912; dead and dying trees now conspicuous; cankers mostly of 1919-1921 origin. Infection caused by Ribes cynosbati; all Ribes destroyed 1925; no new infections. (R.E.W.)

Russell. Black Brook area. Russell Water Works lands; 100 acre lot, original eradication in 1923, re-eradication 1927. Spot infections present in 1923; no new infections since then. (R.E.W.)

Hampshire County

Huntington. Stanton lot. Many limb and trunk infections; 40% infected in 1923; oldest canker 1917; principal cankers of 1920 - 1921 origin. Source of infection Ribes cynosbati; all Ribes destroyed in 1925; no infection since eradication of Ribes. (R.E.W.)

Worthington. John Lyman lot. - 500 acres; trees planted 1909 - 1912, German stock; oldest infection 1905. Latest 1924, majority 1921. Eradication of Ribes incomplete. (R.E.W.)

Plymouth County

Pembroke. Pembroke Arms Inn lot. Very serious infection on ornamental and woodlot pines. Caused by Ribes nigrum. Ribes removed in 1917. Several study plots. (E.M.B.)

4. Efficiency of Ribes Eradication.

Franklin County

South Ashfield. Dr. Murray lot - 100 acres; majority of the wild Ribes very small. Original working in 1927. 99% efficient. (G.S.D.)

Hampden County

Blandford. Springfield Water Works Lands in North Blandford; area of 25 acres; original eradication in 1923; re-eradication in 1927. Re-eradication showed 90% of the original bushes eradicated. Ribes glandulosum and cynosbati. (R.E.W.)



5. Effect of Different Species of Infected Ribes on White Pine

Berkshire County

Becket. W.G. Palmer lot on Jacob's Ladder Highway. See under #1.

Groat Barrington. Fred Remington lot on Nigger Hill. See under #1.

New Marlboro. T.F. Murray lot near Mill River. See under #1.

New Marlboro. Will Rugg lot in Southfield, Mass. See under #1.

Essex County

Newburyport, Mass. Town Park; Medium aged ornamental white pines infected with blister rust - most of the diseased trees have stem cankers which originated prior to 1917, the year the cultivated Ribes in the vicinity were destroyed. The disease apparently came from flowering black currants and possibly Ribes nigrum located near the Park. Numerous infected trees and branches have been destroyed, but in spite of this many diseased pine still exist. (W.T.R.)

Franklin County

Goway. Fred Hamilton lot - 5 acres of young or middle aged pine, very dense. Seriously infected and very conspicuous because of basal cankers. Area located in 1925; all Ribes (wild) destroyed in 1927. Detailed study made in 1927 on  $\frac{1}{4}$  acre. (G.S.D.)

Rowe. Tetreault lot - 6 acres of pine; one acre of which is heavily infected. Large cankers well up in the trees and very conspicuous. Area found in 1926; oldest canker 1905. Infection caused by Ribes nigrum, 12 bushes located 300 feet from the pine; destroyed in 1917. Few wild Ribes destroyed in 1926. No new infections since 1918. Detailed study of the area made in 1927. (G.S.D.)

South Ashfield. George Morton and Doctor Murray lots; two acres each. Plot found in 1925; oldest canker 1916. Infection caused by Ribes cynosbati. Ribes destroyed in 1927. Evidence of dying trees is becoming more and more conspicuous. Study of damage made in 1925. (G.S.D.)

5. Effect of Different Species of Infected Ribes on White Pine

Hampden County

Blandford. Springfield Water Works Lands in North Blandford; area of 25 acres; original eradication in 1923; re-eradication in 1927. Re-eradication showed 90% of the original bushes eradicated. Ribes glandulosum and cynosbati. (R.E.W.)

Chester. Joy lot - See under #1.

Holland. Hamilton lot, several infections traced directly to R. cynosbati. (R.E.W.)

Southampton. Searls area. - block 46. Spot infection traced directly to R. cynosbati. (R.E.W.)

Westhampton. Howard area blocks 2 and 4. Spot infection definitely traceable to R. cynosbati. (R.E.W.)

Hampshire County

Huntington. Stanton lot. See under #1.

Plymouth County

Lisbury. Bow Street lot. Serious injury to group of ornamental pines. From Ribes nigrum; removed in 1917. (E.M.B.)

Hingham. Dorby street lot. First discovered in 1926. Study plots in 1927 show 31% infection. Disease from Ribes nigrum. Ribes removed in 1926. (E.M.B.)

Marion. Marion Town Forest. Infection picked up by Hodgkins and Brockway 1,300 feet from R. rubrum. (E.M.B.)

Pembroke. Pembroke Arms Inn lot. Very serious infection on ornamental and wood lot pines. Caused by Ribes nigrum. Ribes removed in 1917. Several study plots. See under #1. (E.M.B.)

6. Effect of Blister Rust in White Pine Plantations.

Berkshire County

Egremont. E.D. Tidner lot at North Egremont junction of Green River and Alford roads. See under #3.

Great Barrington. Darlington lot; Mason lot; Mackie lot.  
See #1 Effect of Blister Rust on White Pine - (G.S.D.)

Great Barrington. Noxon lot. Pine about 20 or 25 years old. About two acres fringes along garden at edge of town. Two plantings of red currants, one about 100 feet away, the other with pine branches hanging over some of the bushes in one row. Careful watch kept of both Ribes and pine during 1925, 1926 and 1927. No disease ever found on pines. Few disease spots found on Ribes leaves first time in 1927. (G.S.D.)

Lee. Lot on Lee-Tyringham State road. See under #1 Effect of Blister Rust on White Pine. (G.S.D.)

New Marlboro. Mrs. W.E. Bryans lot - See under #1 Effect of Blister Rust on White Pine. (G.S.D.)

Sheffield. H. Rosenblatt lot. Many wild black currants along an old fence. First found in 1925, heavily infected then and each year since. Pine about 25 years old, some younger, immediately adjoining. No trace of rust on pines. Last careful search made in January 1928. (G.S.D.)

Sheffield. Merrill Winn lot. See under #1 Effect of Blister Rust on White Pine. (G.S.D.)

Essex County

Ipswich - Estate of R.T. Crane, Jr.; 15 acres of planted pine from the north side of Sagamore Hill. Special study plot is located in the center of the plantation area. Heavy infection both on trunks and branches. Area found in 1923; Ribes eradicated 1923. Source of infection probably Ribes nigrum, intensifying infection on local Ribes. (W.T.R.)

## 6. Effect of Blister Rust in White Pine Plantations

### Essex County

Topsfield. Bradley Palmer Estate. 7,000 acres with numerous plantations of pine. Several plots of heavy blister rust infection, large cankers, many trees dead and dying. Ribes eradicated 1923. The Ribes causing infection was R. nigrum. (W.T.R.)

### Franklin County

Charlton. Mark Potter lot. 6 acres, 10 year plantation, trees badly stunted due to shade of overwood. Infection about 50% in spots. Area found in 1926. Infection probably caused by Ribes nigrum located 3/4 mile away. (G.S.D.)

Heath, Colrain State Forest. Three cultivated red currants caused damage in this State forest, which was studied in 1926. The study was made in an eighty acre plantation of white pine (Pinus strobus). Three year old stock was used and the trees are now (1926) fourteen years old. The average height is fifteen feet, while the diameter is about three inches. The three bushes of cultivated red currants (Ribes vulgare) two feet tall were all that could be found in the entire plantation. The bushes were large and healthy with pine on all sides.

One lone bush had infected three trees while the other two bushes growing close together at a distance of four hundred feet from the first had caused infection on fourteen trees. All Ribes were heavily infected this season (1926). Pine within a radius of two to five hundred feet were found to be infected. The majority of the infected trees were found in a northwesterly direction from the Ribes. Infection ranged in origin from 1915 to 1923, but was especially heavy in 1917. A study of one tree revealed 27 cankers ranging in origin from 1915 to 1921. Stem cankers and branch infections one foot from the stem were considered to be fatal to the tree.

### Hampshire County

South Worthington. John Lyman lot. 500 acres; trees planted 1908-1912. German stock; oldest infection 1905, latest 1924, majority 1921. Eradication of Ribes incomplete.

On both of the lots listed above, there are many dead and dying trees and infection runs about 50%. These trees were apparently diseased at the time of planting. Ribes cynosbati are present on the area causing a spread from the primary infection. These lots represent original infection areas in this section of the State and the disease has undoubtedly spread from here to surrounding towns. (R.E.W.)



6. Effect of Blister Rust in White Pine Plantations.

Hampshire County

6 Worthington - Forbes lot; 3 acres; trees planted in 1908, German stock, oldest canker 1905, latest 1923, majority 1919-1921. Ribes eradicated 1924, no new infection since. (R.E.W.)

Plymouth County

Lakeville - Jewett Estate on Long Pond Road; property of the new Bedford Water Works. Wild Ribes in a swamp; removed in 1922. Spread of 1,500 feet noted in this area. (E.M.B.)

Worcester County

Superficial studies made to ascertain damage caused by skunk currants.

Plot #1

Bulkley Lot - Ashburnham - Skunk currants growing on and around stone wall - Ribes zone 100 feet long and 25 to 50 feet in width. Pine on slope above Ribes. Study of infection on pines made by zones - first zone within 50 feet of Ribes - second zone 50 feet to 100 feet from Ribes - third zone 100 feet to 200 feet - fourth zone 200 to 300 feet - fifth zone 300 to 400 feet from Ribes. (W.C.)

Plot #2

Schoonmaker Lot - Ashburnham - Skunk currants scattered in swamp and concentrated on run at the edge of the study plot. Pine growing in open space but screened from Ribes by a fairly heavy growth of spruce and hemlock which covered the 50 foot zone. Study carried on in same manner as in Plot #1. (W.C.)

Plot #3

Hardy Lot - Ashburnham. Skunk currants growing in rocky run over an underground stream. Plot laid out in pasture type on slope on east side of run. Pines fully in the open and little screening on the Ribes. (W.C.)

Plot #4

Hardy Lot - Ashburnham - Same Ribes area as Plot #3. Plot laid out on west slope of run. Pines older and growing under hardwoods and hemlock. (W.C.) All of the plots represent conditions most favorable for the spread of the rust from the Ribes.

Spencer - Chestnut Hill lot. 300 acres. Infection readily found in all parts of the plantation (W.C.)

Sturbridge - Trumbley lot. 10 acres of uneven aged white pine. Pines heavily infected and stand shows a rather high mortality. (W.C.)

7. Effect of Blister Rust on Ornamental Pine, and Cutting Out Cankers.

Berkshire County

Lenox. Winthrop Estate. In pine plantation on a tree about six inches in diameter, fruiting canker was found in 1927 on one of the roots just below the ground. (G.S.D.)

Agremont -- See page 24.

Essex County

Topsfield. Bradley Palmer Estate. 7000 acres - many pine plantations - severe blister rust infection in medium aged ornamental pine grove near main house - caused by Ribes nigrum, which were destroyed in 1916 - entire estate also examined for wild Ribes during that year, and re-inspected in 1923. Martin attempted to eradicate the pine infection by cutting out all visible cankers in 1917. Open spaces in grove denote places where trees, killed by blister rust, have been removed. Many pines with stem cankers are still present. Area demonstrates use of white pine for ornamental purposes, damage from blister rust, and difficulty of eradicating pine infections by tree surgery. (W.C.R.)

Plymouth County

Fairbrooke and Duxbury. See record. #1. EFFECT OF BLISTER RUST ON WHITE PINE (E.M.B.)

8. Location of Wild Ribes Species

Berkshire County

See under #6, EFFECT OF BLISTER RUST IN WHITE PINE PLANTATIONS.

Lenox. Prickly currant (R. lacustre) found here by Endersbee in 1929.

Savoy and adjacent towns. Savoy State Forest. Found several thousand R. triste in 1923, supposed to be a rare species in state. (G.S.D.)

Franklin County

Heath. One of the few records for the species, R. lacustre Located in a gully, not far from the Franklin Forestry Co. land in Colrain, Massachusetts. (G.S.D.)

Hampshire County

Cummington. In 1929, in a swamp in this town four species were located viz: R. americanum, R. glandulosum, R. hirtellum, and R. triste. The swamp red currant (R. triste), is only an occasional "find". However, it is more often found here than in any other section. (G.S.D.)

Worcester County

Spencer. - Chestnut Hill lot. Showing the ability of the species R. glandulosum to reproduce from small root fragments. Moss topsail covering, deep mulch. Bad swamp. (W.C.)

## 9. White Pine as a Crop

### Berkshire County

Sheffield - Merrill Wian farm on the Bowwow. About a mile from the Hoyt farm. Old farm almost entirely grown up to pine all sizes from seedlings to mature trees. One small meadow where the owner has mowed down the small seedlings to keep the grass land. There is a chance here that he will be beaten because there are so many that he has not cut them all and the pine stubble which he left is going to bother him considerably at the next mowing. The meadow is entirely surrounded by pine. (G.S.D.)

Arthur Hoyt farm on the Bowwow. About 200 acres most of it untilled during last 12 or 15 years. Practically the entire pasture and several large meadows seeded to pine from old pine on farm. Excellent reproduction and fine growth throughout most of it. No attempt made to "farm" the pine but it would be a good place to make improvements. Very little work is needed.

See Arthur Hoyt, Sheffield, Mass. or G.S.D.

### Hampshire County

Greenwich - The Walker holding of about 1,000 acres of white pine. All ages represented, from seedlings to 100 year old trees. Show fine examples of Selection System; effects of thinning; effects of pruning; and the utilization of white pine and other woods. Good example of the effects of a well handled forest area on a township. The area lies within the section to be made into a reservoir to supply water to the Boston Metropolitan District, and will therefore be in existence but a short while.

See Mr. Wm. H. Walker, Greenwich Village, Mass. or (R.E.W.)

Huntington - Clapp lot - 25 acres; selection cutting; dense natural reproduction coming in as a result of careful logging and selection cutting; also old growth. (R.E.W.)

### Plymouth County

One has but to go to the towns of Penbrooke, Marshfield, Duxbury, Hanson, Hanover, Rochester, Carver, and Middleboro to see white pine and realize the importance of this tree commercially in Massachusetts. The growth is middle sized and reproduction. Pine in Plymouth County is being produced in many sections on a sustained yield basis.

(E.H.B.)

10. Old Growth White Pine.

Berkshire County

Lenox - Estate. 3 or 4 acres of excellent old growth pine. On state road one mile out of Lenox toward Lee. In mixture with old growth hardwoods. Pines average about 24 inches D.B.H. and 100 feet high. Rivals any pine in Massachusetts and probably any in the east for size in second growth. (G.S.D.)

Great Barrington - Berkshire Heights section. Several owners of fine stands of old growth pine ranging from 3 to 10 or 12 years. Lone Pine Farm, Monch Farm, Madrie Farm, Stott Farm, Darlington lot and Folly Farm are some of the best. The latter is the largest, perhaps 20 acres mostly pure but partly in mixture with hardwoods. This lot is reported to be appraised at a million feet. (G.S.D.)

Essex County

Essex - (Essex Woods); A section of about 4,000 acres in certain parts of which there are several apparently virgin white pine trees. Ownership of the large trees apparently in doubt.

Refer to F.R. Raymond, Essex, Mass. or W.T.R.

Franklin County

Orange - Several virgin white pines, located in the village of Tully. Owned by Gale Bros. (G.S.D.)

Hampshire County

Greenwich - Walker holdings - See record #9, WHITE PINE AS A CROP.

Huntington - See Record #9 WHITE PINE AS A CROP.

Middlesex County

Carlisle - Appalachian Mountain Club, Virgin pine lot. About 20 old growth pines exceptionally tall.

Inquire at Carlisle Centre, or refer to Forest Warden, Carlisle, Mass. or W.T.R.

Pepperrell - Pepperrell Springs Forest, located on the Samuel F. Blood Estate adjacent to the plant of the Pepperrell Springs Bottling Company. 35 acres of old growth white pine, some of which is claimed to be of virgin growth.

Refer to the Manager, Pepperrell Springs Bottling Co. or W.T.R.

Plymouth County

Norwell - Stand located at Church Hill, about one mile from Hanover Four Corners. (E.M.B.)



11. White Pine Plantations of Different Ages and Special Significance as Regards Site, Growth, etc.

Berkshire County

There are plantations of every age from one year to 20 or more and ranging from the bottom lands along the Housatonic River to the higher lands of October Mountain. These plantations are distributed from the extreme southern end to the extreme northern end of the district, a distance of about 50 miles. There are all types of site and growth. Only a few are listed. (G.S.D.)

State Forests: October Mountain State Forest - Very extensive plantings species of softwoods.

Refer to W.R. McCulloch, Lee, Mass.

Beartown and Swann State Forests - Plantings of various types.

Refer to Earle Stafford, Monterey, Mass.

Great Barrington, Mass.

Clarksburg - W.E. Whitaker lot. Located on the Vermont line at North Clarksburg. About 14 years old; good growth. (G.S.D.)

Dalton - Crane plantations in Craneville and on State road to Windsor. Total of 75 to 100 acres in several different lots. Marshall Crane plantation in Craneville about 20 years very badly damaged by weevil. Fair growth. 35 or more acres in Highlands, town of Windsor, fair. Probably too close to border line of spruce region. (G.S.D.)

Egremont - B.D. Ticknor lot at North Egremont, junction of Green River and Alford roads. About six acres. Growth on about a third is unexcelled. Trees for last five or six years have averaged more than two feet annually. This is on bottom land good rich loam soil. Another third or a little more is average growth. On little higher land with poorer soil. About an acre is on a knoll with little soil and that very poor. Trees not much good. Pines planted about 14 years in 1928. (G.S.D.)

Hinsdale - Harriet Tracy lot. Planting too high for good growth. Part of plantation in spruce is showing excellent growth. Fine chance to compare growth of two species. Some snow and weevil damage in spots. (G.S.D.)

Washington - Pittsfield Water Works. Rather extensive white pine plantings of good, medium and poor growth. Several hundred acres of Scotch pine and spruce planted nearby. Opportunity to observe growth rates of different species. (G.S.D.)

11. White Pine Plantations of Different Ages and Special Significance as Regards Site, Growth, etc.

Franklin County

Charlément - Mark Potter lot - 6 acres, good site, but underplanted and never weeded; now almost extinct due to shading. (G.S.D.)

Shelburne, State forest lot at the observation tower. Poor site for pine. (G.S.D.)

Montague - Hodgman lot. 4 acres of white pine on sandy soil; trees badly stunted. (G.S.D.)

Plymouth County

East Bridgewater - The Keith Woodlot on Wapping Road in this town is especially interesting, in that the pines were planted 25 years ago and spaced 8 feet by 10 feet. (E.M.B.)

Lakeville - The most extensive plantations in this county are those owned by the New Bedford Water Works; locations are in the towns of Lakeville, Rochester, and Freetown. (E.M.B.)

Worcester County

Clinton - Metropolitan Water Works Wachusett Reservoir Reservation. An area of 4,000 acres with extensive marginal plantations of conifers, principally white pine. Area covered for Ribes. Pines clipped for weevil control. Extensive construction of fire lines. Pruning for fire protection. (W.C.)

Southbridge - Holdings of the Southbridge Water Company. Have specialized more in Scotch pine. Plantations show the effect of the weevil on this species. (W.C.)

Southbridge and Sturbridge - American Optical Company Holdings. Commercial forestry is being practiced by this company on an area of 2,000 acres a large part of which has been planted to conifers, principally white pine. Plantations have been examined for blister rust and Ribes. Intensive weevil control is being practiced. Nursery operated in conjunction with the forest operations. (W.C.)

Sturbridge - 5 acre plantation interplanted with Scotch pine. Gives a fine comparison of the two species under the same conditions. (W.C.)

## 12. White Pine Management

### Berkshire County

Lenox - Misses Sargent estate on Lee-Lenox State road just north of Laurel Lake and Lee-Lenox town line. small grove of pines 20 years old has just recently been thinned and pruned. (G.S.D.)

Great Barrington - George D. Kellogg lot on Christian Hill road. Several acres of pine averaging about 25 to 30 years old. Thinning and pruning has been carried on over a period of six or eight years. Oldest thinned part shows much better growth than the unthinned portion adjoining. (G.S.D.)

### Essex County

Topsfield - Proctor Estate, comprising an area of 4,000 acres. Many plantations on different sites and of many different age classes. (W.T.R.)

### Hamden County

Holyoke - Ashley Ponds plantations of the Holyoke Water Works. Several plantations of various ages and on different sites. (R.E.W.)

Springfield - Angler's Club lot; white and red pine on very poor soil; trees 12-15 years old, some less than 3 feet high; red pine doing much better than white pine. (R.E.W.)

Wilbraham - Day plantation. Conditions similar to Angler's Club plantation in Springfield. (R.E.W.)

### Hamshire County

Greenwich Village - Walker Holdings

- (a) Thinning
- (b) Selection Cuttings
- (c) Pruning.

See record #9 WHITE PINE AS A CROP.

Huntington - see Record #9 WHITE PINE AS A CROP.

### Plymouth County

The George E. Keith Co. of Campello, Mass. have done considerable thinning in their different woodlots in various towns.

- (a) Thinning.

The New Bedford Water Works have done some of this work on their woodlots.

- (c) Pruning. Lot Phillips and Co., of West Hanover, Mass., have done considerable pruning on some of their woodlots. (E.M.B.)



13. Utilization of White Pine.

Bristol County

Acushnet: Acushnet Saw Mills Co.  
North Dartmouth: Howes Lumber Co. (E.M.B.)

Franklin County

Orange - Gale Brothers Box Mill, located in the village of Tully.  
Own a considerable acreage of white pine land. (G.S.D.)

Hampden County

Springfield - New England Box Company, manufacturers of white  
pine boxes, crates, tubs, etc. (R.E.W.)

Westfield - Peck Box Co. (R.E.W.)

Hampshire County

Greenwich - Walter holdings - See record #9 - WHITE PINE AS A CROP.

Plymouth County

Brockton: Benny Box Co.

Carver: Jesse Holmes

Campello: George E. Keith Co. Own considerable acreage and  
operate a mill cutting white pine for use in making their own shoe  
boxes.

Mattapoisett: Dennis Mahoney.

Middleboro: L. C. Atwood also operates white pine grown on his  
own lands.

Norwell: Pinson Lumber Co.

Plympton: Soule and Washburn.

Rochester: Roundsville Brothers have white pine lands which they  
are operating.

West Hanover: Lot Phillips and Co. cut a large amount of local  
white pine. This concern has recently changed from the short logs to  
long logs. Some custom sawing is done.

West Hanover: National Fireworks Company own considerable acre-  
age and operate a mill cutting white pine for use in making their  
own shoe boxes.

West Pembroke: Gilbert West.

Whitman: Atwood Brothers. (E.M.E.)

14. Special Enemies of White Pine.

Berkshire County

Dalton and Windsor. Crane plantations. Weevil. See Record #11,  
WHITE PINE PLANTATIONS. (G.S.D.)

Egremont. Fred Warner lot on Under Mountain Road about a mile  
south of South Egremont. Large patch of pines killed by lightning.  
(G.S.D.)

Great Barrington - D. I. Mackie lot on South Egremont State Road.  
About one acre where field mice have killed large numbers of pine by  
girdling trees at the base. Trees about 12 years old. (G.S.D.)

Sheffield - Snyder lot adjoining Chase lot. On the Bowwow.  
Old pine removed from Chase lot in 1925. Young pine in old field of  
Snyder lot badly attacked by Pales. (G.S.D.)

Hampden County

Wilbraham-Day plantation - Needle blight, weevil, Pales weevil,  
ant injury all at this plantation. R.E.W.)

Plymouth County

Carver: Injury from pine weevil is especially noticeable in  
woodlots through this town. (E.M.B.)

Hingham: Considerable damage from Pales weevil which is present  
in the Hingham Town Forest. E.M.B.)

New Bedford and Taunton Water Works plantations. The white pine  
weevil and needle blight have been particularly serious in the plan-  
tations. (E.M.B.)

Marion - Feeding of gipsy moths on white pines is quite common  
where infestations are heavy. Such damage is particularly noticeable  
on Converse Road in Marion (E.M.B.)

14. Special Enemies of White Pine.

Worcester County

Ashburnham - State plantation - 200 acres - heavy weevil damage. This is the case in the majority of white pine plantations in this district. (W.C.)

Clinton - Metropolitan Water Works Reservation

(a) Weevil (b) Ants. Metropolitan Water Works Reservation. See record #11- WHITE PINE PLANTATIONS.

Southbridge and Sturbridge - Holdings of the American Optical Company. Intensive weevil control is being practiced. (W.C.)

Spencer - Chestnut Hill lot. Weevil. (W.C.)

See record #6 EFFECT OF BLISTER RUST, ON WHITE PINE PLANTATIONS.

15. Diseases on Conifers Other Than White Pine.

Berkshire County

Great Barrington - Worthington Estate. West road to Sheffield near Country Club. Ten or 12 trees ranging in size from two to six inches D.B.H. have been found with Cronartium comptoniae on pitch pine. Best seen from the middle of May to middle of June. Easy to reach and near road. (G.S.D.)

Essex County

Hamilton - Nathan Mathews Estate. The European larch canker was first discovered in the United States on this particular estate. (W.T.R.)

Topsfield - Bradley Palmer Estate. Extensive plantations of foreign and native conifers, both in pure stands and in mixture. The European larch canker can be seen in these plantations, not only on larch but on Douglas fir and western yellow pine. (W.T.R.)

Hamden County

Westfield - Westfield Water Works plantation. Court Street several trees of Scotch pine found infected in 1927 with Cronartium comptoniae. (R.E.W.)

Brinfield, Palmer, Belchertown, Westfield.

For locations of Cronartium comptoniae on pitch pine in the above towns refer to

(R.E.W.)

15. Disease on Conifers Other Than White Pine.

Worcester County

Winchendon - E. Murdock & Co. lots. Several Scotch pine plantations, some infected with Cronartium comptoniae. (W.C.)

16. Special Forestry Features.

Berkshire County

Becket - Experimental plot of the U. S. Department of Agriculture. Several varieties planted about 10 years. Located at junction of Jacob's Ladder and Otis State highway. (G.S.D.)

Egremont - Dr. O.W. Lane property in Egremont. Specimen trees, young trees not yet established. Others also on the Swann Forest. Refer to Dr. Lane, Great Barrington, Earle Stafford, Great Barrington or (G.S.D.)

Great Barrington - State Reservation on State road top Monument Mountain. About one acre lot; 10 years good growth. (G.S.D.)

Great Barrington - Plantation on the estate of Mrs. Harvey Miller on Monument Valley road. About two acres planted about six years. Much of this stand is damaged or killed by rabbits gnawing and girdling the trees. (G.S.D.)

Lenox - Oliver Wendell Holmes pines. (G.S.D.)

Mount Washington - Bashbish Falls, Scenic, Mt. Everett Lookout Tower. (G.S.D.)

Sheffield - Sentinel pines on Frank Winn property. Two or three pines remain of what is reputed to have been a sentinel line established in the tops of high pines during the Revolution. (G.S.D.)

Tyringham - Dr. Palmer estate. Grove of about three acres containing nearly every kind of tree in Berkshire County. (G.S.D.)



## 16. Special Forestry Features.

### Hamden County

Springfield - "Forest Park" This park comprises an area of 800 acres, and has a forest growth made up of practically all the coniferous and deciduous species native to the locality. There are also many varieties of less common and ornamental trees which have been introduced. Of the coniferous trees, the white pine predominates and there are some fine old specimens. Several acres have been planted to white pine and it is planned to restock all open areas. Many large trees have been successfully moved and transplanted to other sites. There are several interesting horticultural features, including the rose gardens containing over 1,000 varieties of plants; the iris garden having over 300 named varieties; the wide expanse of vari-colored rhododendrons, mountain laurel and azaleas; and the ponds abounding in different species of water lilies and lotus flowers.

A wealth of information and enjoyment may be derived from the zoological, ornithological, and horticultural studies to be found in Forest Park.

For further details concerning these features write to Mr. L.F. Prouty, Forester, Springfield, Mass., or refer to (R.E.W.)

### Middlesex County

Cambridge - The Ware collection of glass flowers or the Blaschka glass flowers - Harvard University Museum. Reproductions in glass of flowers and botanical specimens. The collection now contains specimens illustrating approximately 160 families of flowering plants, 550 genera, and 700 species. The collection was started in 1886. It is the work of two naturalists, Leopold Blaschka and his son Rudolph of Germany. The beauty of these flowers have appealed to thousands of visitors and their accuracy of form and color has made them of the highest value in the study of botany.

Refer to Professor Oakes Ames, Supervisor of the Harvard Botanical Museum, Cambridge, Mass. or C.C.P.

### Suffolk County

Jamaica Plain (Boston) - The Arnold Arboretum. Extensive area devoted to the propagation of trees and shrubs, as part of the field equipment of the Division of Botany of Harvard University. Contains specimens of all the native trees and shrubs indigenous to the section, as well as countless other species collected in all parts of the world. Included in the area is a so-called shrub garden where can be found specimens of a number of species of Ribes. The arboretum, in addition to being one of the largest laboratories of its kind in the world, is one of the beauty spots of Metropolitan Boston, where in the spring and summer, there is a succession of bloom which is unsurpassed.

Reached by elevated train to Forest Hills and inquire. By auto, through the Fenway and Jamaica Pond Parkway to Forest Hills. (C.C.P.)

16. Special Forestry Features.

Worcester County

East Brookfield - Old growth pitch pines. Trees 80-100 feet in height. Also large number of white pines of same dimensions. Camp Frank A. Day, Newton Y.M.C.A. (W.C.)

Petersham - The Harvard Forest. Comprises a total area of over 2,000 acres of which 1,775 acres are forested. The forest has been under scientific management for about 19 years during which time careful observations have been made and recorded as to the success of the practice of the different principles of scientific forest management. During the period of management, the Forest has performed a triple service as: (1) A model forest to demonstrate the practice of forestry; (2) An experiment station for research in forestry; and (3) A field laboratory for the training of students for the practice of the profession of forestry. The Forest was acquired by gift in 1907. During the 10 year period 1909-19 over 2½ million board feet of lumber were marketed from the Forest. As a result of these operations, it has been conclusively demonstrated that timber can be grown continuously on a properly managed forest. See Director, Harvard Forest, Petersham, Mass., or (C.C.I.)

17. Effect of Blister Rust on Ornamental Pines.

Berkshire County

Egremont - Wait Talcott lot at North Egremont. Grove of six or eight acres surrounding buildings on summer estate. Infected pines of 8" - 12" diameter, with stem cankers have been treated by the owner. Bark has been cut away and wound painted over. Nearly all treatments have been successful. One or two doubtful cases.

See Mr. Talcott or (G.S.D.) Egremont.

See also Page 13.

17. Berkshire Forestry Tour

<u>FEATURE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>	<u>OWNER</u>
<u>BECKET</u>			
High bush cranberry plantation	Several varieties planted about 10 yrs. An experiment in culture of this bush.	Becket, Junction of Jacob's Ladder & Otis state highway.	U.S. Dept. Agriculture Mr. Andrews.
<u>CLARKSBURG</u>			
Pine plantation	About 14 years old. good growth.	Vermont line at N. Clarksburg.	W.E. Whitaker.
<u>DALTON</u>			
Pine plantations	15 to 20 yrs. old good and bad growth. Much weeviled.	At Craneville & on Windsor road	Marshall Crane.
<u>Egremont</u>			
Pine plantation B.R. damage	14 yr. old. excellent growth edges badly damaged by rust.	At N. Egre. Junction Green River & Alford roads.	Benjamin Tichnor.
<u>Great Barrington</u>			
White pine Reproduction	Berkshire Heights section extensive repro. all sizes.	Berkshire Hgts. Section	Many
Old pine	Excellent stands several large ones. Producing much reproduction.	Berkshire Hgts. Seekonk.	Many
Blister Rust	On young pines from gooseberry bushes. Killed repro.	Berkshire Hgts. Section.	Many
Mice damage.	About acre young pines damaged by mice girdling at ground.	Berkshire Hgts. Section.	D.I. Mackie
Cronartium	Many pitch pines with this disease. Fruiting in spring.	W. road to Sheffield.	D. Worthington
Scotch pine	About an acre. 10 yrs. good growth.	On state road top Monument Mt.	State Reservation.
Thinning & pruning	White pine about 25 yrs. old Operation over 6 to 8 yrs. Parts of stand untouched.	On Christian Hills road	Geo. Kellogg.



17. Berkshire Forestry Tour

<u>FEATURE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>	<u>OWNER</u>
<u>Hinsdale</u> Tracy plantations.	White pine, spruce and about 13 yrs. Excellent-spruce Others not so good.	On Hinsdale Middlefield Rd.	Harriet Tracy.
<u>Lee</u> Plantations	Spruce and pines on state lands. Extensive over several years.	October Mt.	McCulloch Supt.
Blister rust	On young pines now mostly dead.	E. Lee	
White Pines	Oliver Wendell Holmes	In Lenox	
Pine reproduction	Excellent and extensive around Laurel Lake		
Thinning	Young pines 20 yrs. thinned and pruned.	On Lee-Lenox road	Misses Sargent.
Blister Rust	Fruiting on root of pine	Winthrop Est.	Winthrop
<u>Monterey</u>			
White pine	Excellent stand of all ages around Lake Garfield	Lake Garfield	Many
State Forest	Beartown and Swann. Many interesting plantations and improvements.		
<u>Mount Washington</u> State forests	Basbish Falls scenic. Mt. Everett lookout station.		
<u>New Marlboro</u> Fish Hatchery	U.S. trout hatchery	Hartsville	Mr. Thompson
White pine	Excellent old and young pine stands around lake Buel. Fine reproduction.	Lake Buel	Mr. Gibson
	Excellent pines all sizes and many varieties of hardwoods	Mills River	J.H. Willets

17. Berkshire Forestry Tour

<u>FEATURE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>	<u>OWNER</u>
<u>North Adams</u> State Forest	Greylock reservation and lookout tower.	North Adams or Adams.	
Trail	Mohawk trail scenic.		
<u>Sheffield</u> White Pine farm	Two farms untilled for several years are coming up to pine. All sizes to maturity, excellent.	On the Bowwow	Art. Hoyt H. Winn.
P. reproduction	Old field of small pines, thick.	Bowwow	Mr. Snyder.
P. plantation	12 years of old fine growth	Middle rd.	Mr. Ogden.
Historic pines	Sentinel pines. Used dur- ing Revolution for a line of sentinel towers two now standing.	Bowwow	Frank Winn.
<u>Tyringham</u> Arboretum	Grove of about three acres containing nearly every kind of tree in Berkshire county.	On state road to Tyringham	Dr. Palmer.
B.R. roadside demonstrations	Exhibits of diseased pines in natural state or collected specimen.	Jacob's ladder Mohawk trail Otis-Sandis- field highway.	
<u>Washington</u> Plantations	State forest, October Mountain and Pittsfield Waterworks. Extensive planting of pine and spruce over several years.		
<u>Windsor</u> Spruce and fir	Extensive spruce region.		

Refer to G.S.D.

For Additional Data

For Additional Data

